IN THE CLAIMS:

Please AMEND the claims as indicated below:

1. (CURRENTLY AMENDED) A variable optical filter comprising:

first and second filter sections connected in series, ~~to each other,~~ said first and second filter sections ~~each~~ having ~~a~~ corresponding first and second filter characteristics respectively with ~~whose~~ transmissivity of each filter characteristic changing ~~is changed~~ periodically along an optical frequency axis, ~~the~~ said first and second filter characteristics each having variable transmissivity and ~~capable~~ capability of being ~~moved in parallel to~~shifted in an optical frequency axis direction, ~~and also the same~~ said first and second filter characteristics ~~can be~~being set within a common variable range in the optical frequency axis direction; and

a control section for, when the filter characteristic of one of said first and second filter sections is required to ~~move in parallel to~~shift in the optical frequency axis direction to exceed the variable range, relatively controlling the filter characteristics of said first and second filter sections with respect to each other such that ~~the~~ a switching is performed from said one of said first and second filter ~~section~~ sections to the other of said first and second filter ~~section~~sections, provided that the overall combined filter characteristic of ~~when~~ said first and second filter sections ~~are combined~~ becomes constant, to thereby allow the filter characteristic of said other of the first and second filter sections to shift in the optical frequency axis direction instead of the filter characteristic of said one of the first and second filter sections.

2. (CURRENTLY AMENDED) A variable optical filter according to claim 1,

wherein, when said first filter section is in a state in which ~~the~~ its filter characteristic thereof is flat with respect to the optical frequency axis so that the maximum transmissivity can be obtained, and the overall combined filter characteristic is determined by the filter characteristic of said second filter section, then before the ~~parallel movement~~shift of the filter characteristic of said second filter section in the optical frequency axis direction reaches a boundary of ~~the~~ said variable range, said control section performs ~~the~~ a switching from said second filter section to said first filter section by reducing continuously the amplitude of the transmissivity of the filter characteristic of said first filter section while increasing continuously the amplitude of the transmissivity of the filter characteristic of said second filter section, provided that the overall combined filter characteristic of ~~when~~ said first and second filter sections ~~are combined~~ becomes constant.~~.~~

3. (CURRENTLY AMENDED) A variable optical filter according to claim 2,

wherein said control section, when performing the switching from said second filter section to said first filter section, controls a phase of said first filter section so that the ~~parallel movement~~shift of the filter characteristic of said first filter section in the optical frequency axis direction becomes a state corresponding to the vicinity of the center of the variable range.

4. (CURRENTLY AMENDED) A variable optical filter according to claim 1,

wherein, when said first filter section is in a state in which the said first filter characteristic thereof is flat with respect to optical frequency axis so that the maximum transmissivity can be obtained, and ~~the~~ said overall combined filter characteristic is determined by ~~the~~ said second filter characteristic of said second filter section, then before the ~~parallel movement~~shift of ~~the~~ said second filter characteristic of said second filter section in the optical frequency axis direction reaches a boundary of ~~the~~ said variable range, said control section performs ~~the~~ a switching from said second filter section to said first filter section by reducing continuously the amplitude of ~~the~~ said transmissivity of said first filter ~~section~~ characteristic while increasing continuously the amplitude of the transmissivity of said second filter ~~section~~characteristic, provided that the overall combined filter characteristic of when said first and second filter sections ~~are combined~~ becomes constant,

and said control section successively controls a phase of said second filter section so that the ~~parallel movement~~shift of ~~the~~ said second filter characteristic of said second filter section in the optical frequency axis direction becomes a state corresponding to ~~the~~ a vicinity of the center of the variable range,

and said control section performs ~~the~~ a switching from said first filter section to said second filter section by increasing continuously the amplitude of the transmissivity of said first filter characteristic of said first filter section while reducing continuously the amplitude of the transmissivity of said second characteristic of said second filter section, provided that the overall combined filter characteristic of when said first and second filter sections ~~are combined~~ becomes constant.

5. (ORIGINAL) A variable optical filter according to claim 1, further comprising;

an optical amplification section for compensating for losses occurring in said first and second filter sections.

6. (ORIGINAL) A variable optical filter according to claim 5,

wherein said optical amplification section is arranged between said first and second filter sections.

7. (CURRENTLY AMENDED) A variable optical filter according to claim 1,

wherein said first and second filter sections each comprises a plurality of period filters with mutually different periods connected in series.

8. (CURRENTLY AMENDED) A variable optical filter according to claim 1,

wherein said first and second filter sections each includes a Mach-Zehnder interferometer ~~type~~ filter.

9. (CURRENTLY AMENDED) An optical transmission system for collectively amplifying a wavelength division multiplexed signal light using an optical amplifier arranged on an optical transmission path, and ~~also~~ compensating for a tilt occurring in the wavelength division multiplexed signal light using at least one gain equalizer to repeatedly transmit the wavelength division multiplexed signal light,

wherein said gain equalizer includes a variable optical filter recited in claim 1.

10. (ORIGINAL) An optical transmission system according to claim 9,

wherein in said variable optical filter, said first and second filter sections are arranged in different repeating intervals.

11. (CURRENTLY AMENDED) A method of controlling a variable optical filter with a filter characteristic ~~whose~~ having its transmissivity ~~is~~ changed periodically along an optical frequency axis, wherein ~~for~~ first and second filter sections are connected in series ~~to each other~~, said first and second filter sections having ~~a~~ first and second filter characteristics respectively ~~whose~~ with transmissivity that is changed periodically along an optical frequency axis, ~~the~~ said first and second filter characteristics ~~has~~ having variable transmissivity and ~~can be~~ capability of being ~~moved in parallel to~~ shifted in an optical frequency axis direction, ~~and also the same~~ said first and second filter characteristics ~~can be~~ capable of being set within a common variable range in the optical frequency axis direction, the method comprising:

when the filter characteristic of one of said first and second filter sections is required to ~~move in parallel to~~ shift in the optical frequency axis direction to exceed ~~the~~ said variable range, ~~the~~ said first and second filter characteristics of said first and second filter sections respectively are relatively controlled such that ~~the~~ a switching is performed from said one of said first and

second filter ~~section~~ sections to the other of said first and second filter sections, provided that the overall combined filter characteristic of ~~when~~ said first and second filter sections ~~are combined~~ becomes constant, to thereby allow the filter characteristic of said other of the first and second filter sections to shift in the optical frequency axis direction instead of the filter characteristic of said one of the first and second filter sections.

12. (CURRENTLY AMENDED) A method of controlling a variable optical filter according to claim 11,

wherein, when said first filter section is in a state in which ~~the~~ its filter characteristic thereof is flat with respect to the optical frequency axis so that the maximum transmissivity can be obtained, and the overall filter characteristic is determined by the filter characteristic of said second filter section, then before the ~~parallel movement~~shift of the filter characteristic of said second filter section in the optical frequency axis direction reaches a boundary of the variable range, ~~the~~ a switching from said second filter section to said first filter section is performed by reducing continuously the amplitude of the transmissivity of the filter characteristic of said first filter section while increasing continuously the amplitude of the transmissivity of the filter characteristic of said second filter section, provided that the overall combined filter characteristic of ~~when~~ said first and second filter sections ~~are combined~~ becomes constant.